10588169

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSSPTA1626GMS

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS 1		Web Page for STN Seminar Schedule - N. America
NEWS 2	NOV 21	CAS patent coverage to include exemplified prophetic substances identified in English-, French-, German-, and Japanese-language basic patents from 2004-present
NEWS 3	NOV 26	MARPAT enhanced with FSORT command
NEWS 4	NOV 26	CHEMSAFE now available on STN Easy
NEWS 5	NOV 26	Two new SET commands increase convenience of STN searching
NEWS 6	DEC 01	ChemPort single article sales feature unavailable
NEWS 7	DEC 12	GBFULL now offers single source for full-text coverage of complete UK patent families
NEWS 8	DEC 17	Fifty-one pharmaceutical ingredients added to PS
NEWS 9	JAN 06	The retention policy for unread STNmail messages will change in 2009 for STN-Columbus and STN-Tokyo
NEWS 10	JAN 07	WPIDS, WPINDEX, and WPIX enhanced Japanese Patent Classification Data
NEWS 11	FEB 02	Simultaneous left and right truncation (SLART) added for CERAB, COMPUAB, ELCOM, and SOLIDSTATE
NEWS 12	FEB 02	GENBANK enhanced with SET PLURALS and SET SPELLING
NEWS 13	FEB 06	Patent sequence location (PSL) data added to USGENE
NEWS 14	FEB 10	COMPENDEX reloaded and enhanced
NEWS 15	FEB 11	WTEXTILES reloaded and enhanced
NEWS 16	FEB 19	New patent-examiner citations in 300,000 CA/CAplus patent records provide insights into related prior art
NEWS 17	FEB 19	Increase the precision of your patent queries -- use terms from the IPC Thesaurus, Version 2009.01
NEWS 18	FEB 23	Several formats for image display and print options discontinued in USPATFULL and USPAT2
NEWS 19	FEB 23	MEDLINE now offers more precise author group fields and 2009 MeSH terms
NEWS 20	FEB 23	TOXCENTER updates mirror those of MEDLINE - more precise author group fields and 2009 MeSH terms
NEWS 21	FEB 23	Three million new patent records blast AEROSPACE into STN patent clusters
NEWS 22	FEB 25	USGENE enhanced with patent family and legal status display data from INPADOCDB
NEWS 23	MAR 06	INPADOCDB and INPAFAMDB enhanced with new display formats

NEWS EXPRESS JUNE 27 08 CURRENT WINDOWS VERSION IS V8.3,

AND CURRENT DISCOVER FILE IS DATED 23 JUNE 2008.

NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS LOGIN Welcome Banner and News Items
NEWS IPC8 For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 10:53:04 ON 09 MAR 2009

=>
Uploading
THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE
Do you want to switch to the Registry File?
Choice (Y/n):
Switching to the Registry File...
Some commands only work in certain files. For example, the EXPAND command can only be used to look at the index in a file which has an index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of commands which can be used in this file.

=> FILE REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.22	0.22

FILE 'REGISTRY' ENTERED AT 10:53:17 ON 09 MAR 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 6 MAR 2009 HIGHEST RN 1116745-20-0
DICTIONARY FILE UPDATES: 6 MAR 2009 HIGHEST RN 1116745-20-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 9, 2009.

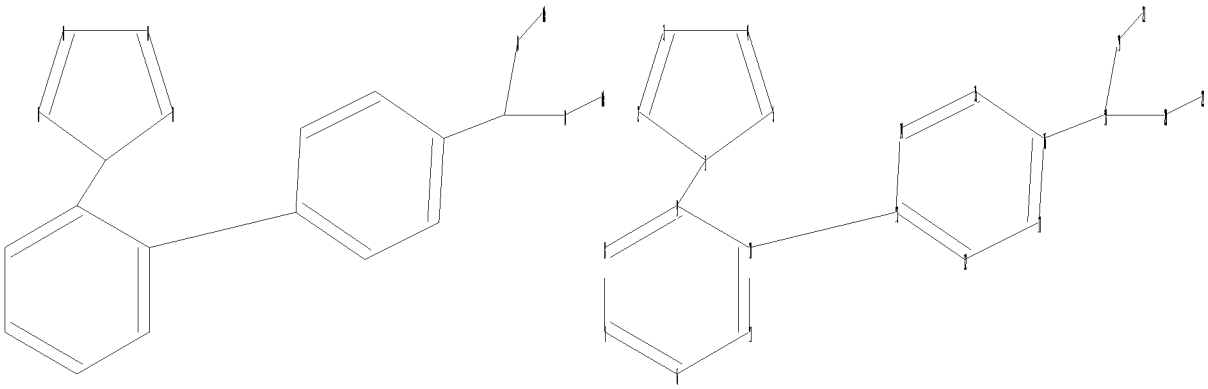
Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information

on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Program Files\Stnexp\Queries\10588169.str

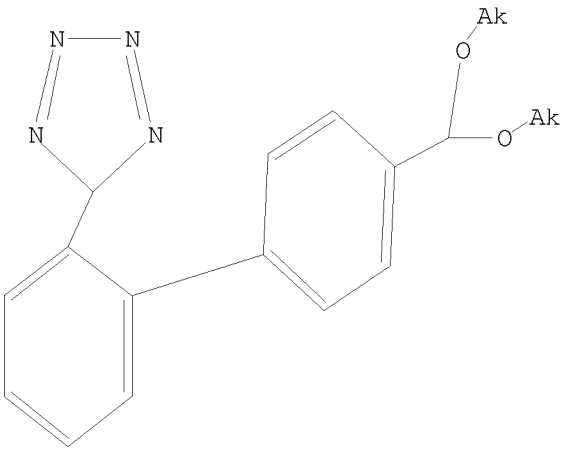


chain nodes :
18 19 20 21 22
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
chain bonds :
1-9 10-13 16-18 18-19 18-20 19-21 20-22
ring bonds :
1-2 1-5 2-3 3-4 4-5 6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14
14-15 15-16 16-17
exact/norm bonds :
1-2 1-5 2-3 3-4 4-5 18-19 18-20 19-21 20-22
exact bonds :
1-9 10-13 16-18
normalized bonds :
6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14 14-15 15-16 16-17
isolated ring systems :
containing 1 : 6 : 12 :

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:CLASS 19:CLASS
20:CLASS 21:CLASS 22:CLASS

L1 STRUCTURE UPLOADED

=> D L1
L1 HAS NO ANSWERS
L1 STR



Structure attributes must be viewed using STN Express query preparation.

```
=> S L1
SAMPLE SEARCH INITIATED 10:53:35 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     1166 TO ITERATE

100.0% PROCESSED     1166 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        21272 TO    25368
PROJECTED ANSWERS:               0 TO        0

L2            0 SEA SSS SAM L1

=> S L1 SSS FULL
FULL SEARCH INITIATED 10:53:42 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    22259 TO ITERATE

100.0% PROCESSED    22259 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.02

L3            0 SEA SSS FUL L1

=>
Uploading C:\Program Files\Stnexp\Queries\10588169a.str
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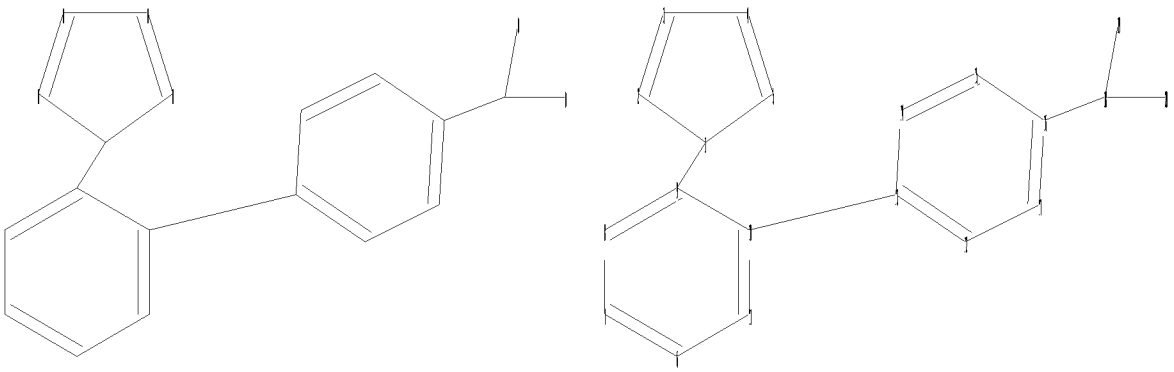
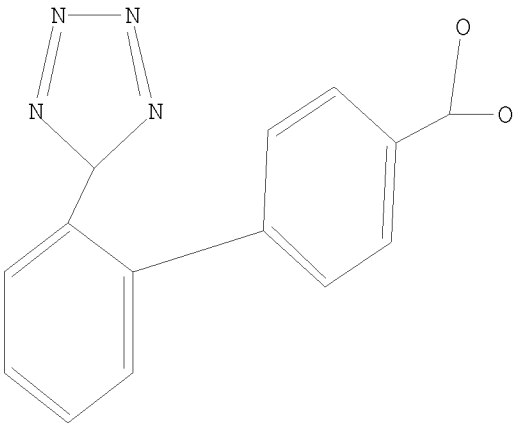


chain nodes :
18 19 20
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
chain bonds :
1-9 10-13 16-18 18-19 18-20
ring bonds :
1-2 1-5 2-3 3-4 4-5 6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14
14-15 15-16 16-17
exact/norm bonds :
1-2 1-5 2-3 3-4 4-5 18-19 18-20
exact bonds :
1-9 10-13 16-18
normalized bonds :
6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14 14-15 15-16 16-17
isolated ring systems :
containing 1 : 6 : 12 :

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:CLASS 19:CLASS
20:CLASS

L4 STRUCTURE UPLOADED

=> d l4
L4 HAS NO ANSWERS
L4 STR



Structure attributes must be viewed using STN Express query preparation.

```
=> s l4
SAMPLE SEARCH INITIATED 10:55:26 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     1166 TO ITERATE

100.0% PROCESSED     1166 ITERATIONS                                 1 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        21272 TO    25368
PROJECTED ANSWERS:               1 TO       80

L5            1 SEA SSS SAM L4

=> s l4 sss full
FULL SEARCH INITIATED 10:55:34 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    22259 TO ITERATE

100.0% PROCESSED    22259 ITERATIONS                                2 ANSWERS
SEARCH TIME: 00.00.01

L6            2 SEA SSS FUL L4

=> FIL HCAPLUS
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                     372.72     372.94

FILE 'HCAPLUS' ENTERED AT 10:55:44 ON 09 MAR 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 AMERICAN CHEMICAL SOCIETY (ACS)
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FILE COVERS 1907 - 9 Mar 2009 VOL 150 ISS 11
FILE LAST UPDATED: 8 Mar 2009 (20090308/ED)

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2008.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l6
L7 2 L6

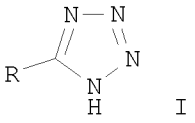
=> d l7 ibib abs hitstr tot

L7 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:141074 HCAPLUS
DOCUMENT NUMBER: 142:240438
TITLE: A preparation of tetrazole derivatives via heterocyclization of nitriles with azides
INVENTOR(S): Sedelmeier, Gottfried
PATENT ASSIGNEE(S): Novartis A.-G., Switz.; Novartis Pharma G.m.b.H.
SOURCE: PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005014602	A1	20050217	WO 2004-EP7980	20040715
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004263265	A1	20050217	AU 2004-263265	20040715
AU 2004263265	B2	20070906		

CA 2532175	A1	20050217	CA 2004-2532175	20040715
EP 1646636	A1	20060419	EP 2004-801815	20040715
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
BR 2004012558	A	20060919	BR 2004-12558	20040715
CN 1852908	A	20061025	CN 2004-80026438	20040715
NZ 544644	A	20080731	NZ 2004-544644	20040715
IN 2006CN00155	A	20070629	IN 2006-CN155	20060112
MX 2006000561	A	20060330	MX 2006-561	20060113
KR 2006038994	A	20060504	KR 2006-700855	20060113
NO 2006000729	A	20060404	NO 2006-729	20060215
US 20070043098	A1	20070222	US 2006-564337	20060811
PRIORITY APPLN. INFO.:			GB 2003-16546 A	20030715
			WO 2004-EP7980 W	20040715

OTHER SOURCE(S): CASREACT 142:240438; MARPAT 142:240438
GI

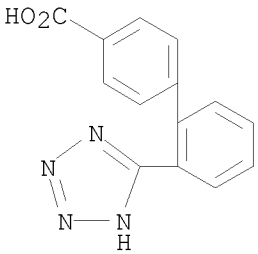


I

AB The invention relates to a preparation of tetrazole derivs. of formula I (R is organic residue) via heterocyclization of nitriles with azides. For instance, 5-(2-chlorophenyl)-1H-tetrazole was prepared via heterocyclization of 2-chlorobenzonitrile with sodium azide.

IT 164265-78-5P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of tetrazole derivs. via heterocyclization of azides with nitriles)

RN 164265-78-5 HCAPLUS
CN [1,1'-Biphenyl]-4-carboxylic acid, 2'-(2H-tetrazol-5-yl)- (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1995:575743 HCAPLUS
DOCUMENT NUMBER: 123:25147
ORIGINAL REFERENCE NO.: 123:4437a,4440a
TITLE: Metabolic fate of losartan, a new angiotensin II

receptor antagonist (1): absorption, distribution, metabolism and excretion after single administration in rats

AUTHOR(S): Takayama, Fumio; Saito, Kaoru; Yoshinaga, Tomomi; Morita, Mitsuko; Hata, Shunsuke; Esumi, Yoshio; Jin, Yoshitaka; Okamura, Yuichi

CORPORATE SOURCE: Dev. Res. Lab., Banyu Pharmaceutical Co., Ltd., Japan

SOURCE: Yakubutsu Dotai (1995), 10(2), 223-43
CODEN: YADOEL; ISSN: 0916-1139

PUBLISHER: Nippon Yakubutsu Dotai Gakkai

DOCUMENT TYPE: Journal

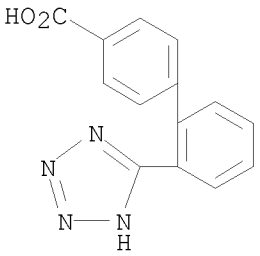
LANGUAGE: Japanese

AB The absorption, distribution, metabolism and excretion of losartan were investigated in male and female rats after a single administration. There were no sex-related differences in the pharmacokinetic parameters of radioactivity in plasma and blood of rats after oral (10 mg/kg) and i.v. dosing (3 mg/kg) of 14C-losartan. Bioavailabilities after oral administration of losartan to male rats at doses of 15, 45 and 135 mg/kg were 31.5%, 35.5% and 38.2%, resp. After a single oral administration of 14C-losartan (10 mg/kg) to male rats, whole-body autoradiog. showed that most of the radioactivity was rapidly and widely distributed, particularly to the gastrointestinal tract, liver and urine present in the bladder, and the radioactivity declined to very low levels within 48 h. The quant. tissue anal. showed that the highest levels of radioactivity were found in liver at 30 min after dosing, followed by stomach, small intestine, kidney and plasma. By 96 h after administration, the radioactivity in the liver was less than 1% of the level seen at 30 min after dosing, and the concns. in the other tissues were below the detection limit of the assay. After oral administration of 14C-losartan (10 mg/kg) to male rats, less than 3.5% of administered radioactivity was distributed to blood cells, and more than 99% of the radioactivity was bound to plasma proteins. Within 3 h after injection of 14C-losartan (10 mg/kg) to male rats, 19.8%, 32.1%, 89.6% and 51.4% of administered radioactivity were present in the stomach, duodenum, jejunum and ileum, resp. Within 48 h after oral administration of 14C-losartan (10 mg/kg) to rats, 62.2% (male) and 59.5% (female) of administered radioactivity were excreted into bile. Within 168 h after administration to male rats, 4.4% and 94% of administered radioactivity were excreted into urine and feces, resp., and the enterohepatic circulation accounted for approx. 16% of administered bile within 8 h after administration. Losartan and its metabolites were found in the liver and bile of male and female rats at 2 h and 6 h after oral administration of 14C-losartan (10 mg/kg). In the kidney of male and female rats, losartan, and metabolite were found. Within 24 h after oral administration, the percentage of urinary excretion of losartan and one of its metabolite was 0.3% and 1.3% in male rats, and 9.1% and 0.0% in female rats, resp.

IT 164265-78-5
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(losartan metabolism, tissue distribution and metabolites in rats)

RN 164265-78-5 HCAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 2'-(2H-tetrazol-5-yl)- (CA INDEX NAME)



=> FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	25.53	398.47

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-1.64	-1.64

FILE 'REGISTRY' ENTERED AT 10:58:55 ON 09 MAR 2009

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 6 MAR 2009 HIGHEST RN 1116745-20-0
DICTIONARY FILE UPDATES: 6 MAR 2009 HIGHEST RN 1116745-20-0

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TSCA INFORMATION NOW CURRENT THROUGH January 9, 2009.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

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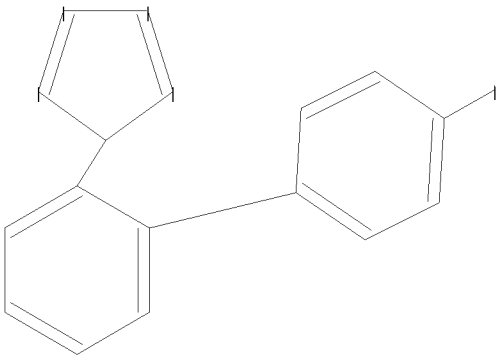
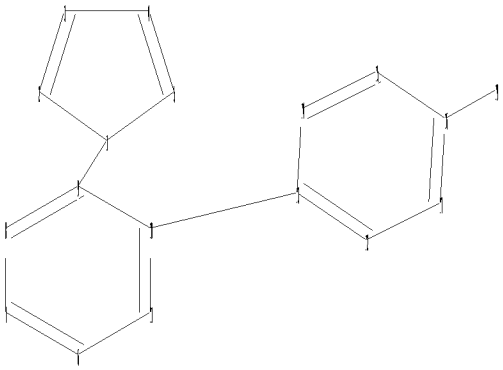
http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Program Files\Stnexp\Queries\10588169y.str



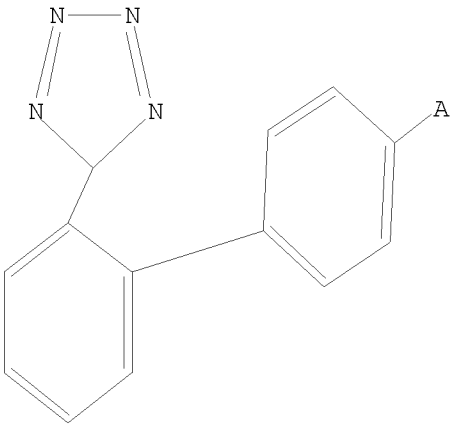


chain nodes :
19
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
chain bonds :
1-9 10-13 16-19
ring bonds :
1-2 1-5 2-3 3-4 4-5 6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14
14-15 15-16 16-17
exact/norm bonds :
1-2 1-5 2-3 3-4 4-5 16-19
exact bonds :
1-9 10-13
normalized bonds :
6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14 14-15 15-16 16-17
isolated ring systems :
containing 1 : 6 : 12 :

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 19:CLASS

L8 STRUCTURE UPLOADED

=> d l8
L8 HAS NO ANSWERS
L8 STR



Structure attributes must be viewed using STN Express query preparation.

```
=> s l8
SAMPLE SEARCH INITIATED 10:59:15 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     2035 TO ITERATE

 98.3% PROCESSED     2000 ITERATIONS                              50 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:         37994 TO    43406
PROJECTED ANSWERS:            11359 TO    14403

L9            50 SEA SSS SAM L8

=> s l8 sss full
FULL SEARCH INITIATED 10:59:22 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    39473 TO ITERATE

100.0% PROCESSED    39473 ITERATIONS                          11676 ANSWERS
SEARCH TIME: 00.00.02

L10        11676 SEA SSS FUL L8

=>
Uploading C:\Program Files\Stnexp\Queries\10588169b.str
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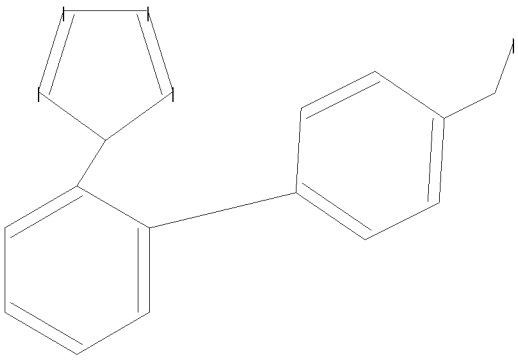
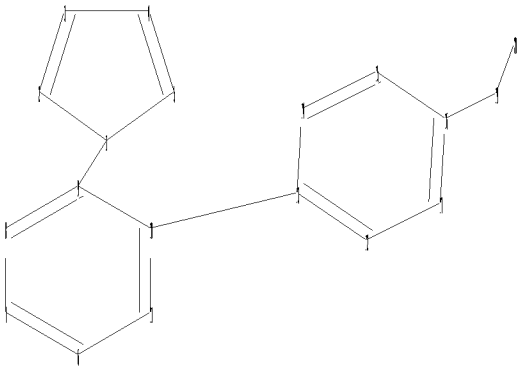


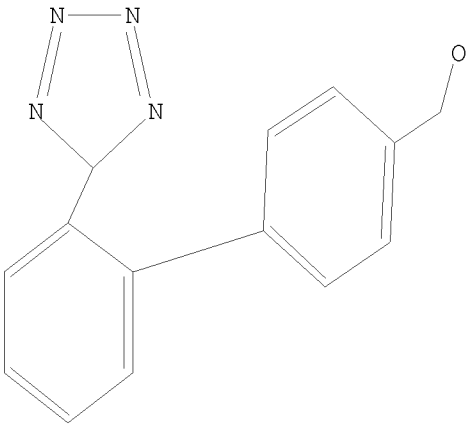


chain nodes :
19 20
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
chain bonds :
1-9 10-13 16-19 19-20
ring bonds :
1-2 1-5 2-3 3-4 4-5 6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14
14-15 15-16 16-17
exact/norm bonds :
1-2 1-5 2-3 3-4 4-5 19-20
exact bonds :
1-9 10-13 16-19
normalized bonds :
6-7 6-11 7-8 8-9 9-10 10-11 12-13 12-17 13-14 14-15 15-16 16-17
isolated ring systems :
containing 1 : 6 : 12 :

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 19:CLASS 20:CLASS

L11 STRUCTURE UPLOADED

=> d l11
L11 HAS NO ANSWERS
L11 STR



Structure attributes must be viewed using STN Express query preparation.

```
=> s l11
SAMPLE SEARCH INITIATED 11:01:21 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     1166 TO ITERATE

100.0% PROCESSED     1166 ITERATIONS                              26 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        21272 TO    25368
PROJECTED ANSWERS:             215 TO      825

L12          26 SEA SSS SAM L11

=> s l11 sss full
FULL SEARCH INITIATED 11:01:30 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    22259 TO ITERATE

100.0% PROCESSED    22259 ITERATIONS                             547 ANSWERS
SEARCH TIME: 00.00.01

L13         547 SEA SSS FUL L11

=> FIL HCAPLUS
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                     373.20     771.67

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                       0.00      -1.64

FILE 'HCAPLUS' ENTERED AT 11:02:11 ON 09 MAR 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
```

FILE COVERS 1907 - 9 Mar 2009 VOL 150 ISS 11
FILE LAST UPDATED: 8 Mar 2009 (20090308/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

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=> d his

     (FILE 'HOME' ENTERED AT 10:53:04 ON 09 MAR 2009)

     FILE 'REGISTRY' ENTERED AT 10:53:17 ON 09 MAR 2009
L1             STRUCTURE UPLOADED
L2           0 S L1
L3           0 S L1 SSS FULL
L4             STRUCTURE UPLOADED
L5           1 S L4
L6           2 S L4 SSS FULL

     FILE 'HCAPLUS' ENTERED AT 10:55:44 ON 09 MAR 2009
L7           2 S L6

     FILE 'REGISTRY' ENTERED AT 10:58:55 ON 09 MAR 2009
L8             STRUCTURE UPLOADED
L9          50 S L8
L10      11676 S L8 SSS FULL
L11            STRUCTURE UPLOADED
L12         26 S L11
L13        547 S L11 SSS FULL

     FILE 'HCAPLUS' ENTERED AT 11:02:11 ON 09 MAR 2009

=> s l10
L14       8034 L10

=> s l13
L15        143 L13
```

```
=> s l14 and aryl magnesium halide
        237277 ARYL
           629 ARYLS
        237618 ARYL
                  (ARYL OR ARYLS)
        550101 MAGNESIUM
            91 MAGNESIUMS
        550136 MAGNESIUM
                  (MAGNESIUM OR MAGNESIUMS)
        162605 HALIDE
        134568 HALIDES
        233992 HALIDE
                  (HALIDE OR HALIDES)
            38 ARYL MAGNESIUM HALIDE
                  (ARYL(W)MAGNESIUM(W)HALIDE)
L16          0 L14 AND ARYL MAGNESIUM HALIDE

=> s l15 and aryl magnesium halide
        237277 ARYL
           629 ARYLS
        237618 ARYL
                  (ARYL OR ARYLS)
        550101 MAGNESIUM
            91 MAGNESIUMS
        550136 MAGNESIUM
                  (MAGNESIUM OR MAGNESIUMS)
        162605 HALIDE
        134568 HALIDES
        233992 HALIDE
                  (HALIDE OR HALIDES)
            38 ARYL MAGNESIUM HALIDE
                  (ARYL(W)MAGNESIUM(W)HALIDE)
L17          0 L15 AND ARYL MAGNESIUM HALIDE

=> s l14 and aryl magnesium
        237277 ARYL
           629 ARYLS
        237618 ARYL
                  (ARYL OR ARYLS)
        550101 MAGNESIUM
            91 MAGNESIUMS
        550136 MAGNESIUM
                  (MAGNESIUM OR MAGNESIUMS)
            96 ARYL MAGNESIUM
                  (ARYL(W)MAGNESIUM)
L18          0 L14 AND ARYL MAGNESIUM

=> s l15 and aryl magnesium
        237277 ARYL
           629 ARYLS
        237618 ARYL
                  (ARYL OR ARYLS)
        550101 MAGNESIUM
            91 MAGNESIUMS
        550136 MAGNESIUM
                  (MAGNESIUM OR MAGNESIUMS)
            96 ARYL MAGNESIUM
```

```
                (ARYL(W)MAGNESIUM)
L19          0 L15 AND ARYL MAGNESIUM

=> s l14 and transition metal catalyst
       1083529 TRANSITION
        280531 TRANSITIONS
       1203452 TRANSITION
                (TRANSITION OR TRANSITIONS)
       1907898 METAL
        951296 METALS
       2311183 METAL
                (METAL OR METALS)
        833374 CATALYST
        829879 CATALYSTS
       1068162 CATALYST
                (CATALYST OR CATALYSTS)
          5907 TRANSITION METAL CATALYST
                (TRANSITION(W)METAL(W)CATALYST)
L20          0 L14 AND TRANSITION METAL CATALYST

=> s l15 and transition metal catalyst
       1083529 TRANSITION
        280531 TRANSITIONS
       1203452 TRANSITION
                (TRANSITION OR TRANSITIONS)
       1907898 METAL
        951296 METALS
       2311183 METAL
                (METAL OR METALS)
        833374 CATALYST
        829879 CATALYSTS
       1068162 CATALYST
                (CATALYST OR CATALYSTS)
          5907 TRANSITION METAL CATALYST
                (TRANSITION(W)METAL(W)CATALYST)
L21          0 L15 AND TRANSITION METAL CATALYST

=> s l14 and metal catalyst
       1907898 METAL
        951296 METALS
       2311183 METAL
                (METAL OR METALS)
        833374 CATALYST
        829879 CATALYSTS
       1068162 CATALYST
                (CATALYST OR CATALYSTS)
         26574 METAL CATALYST
                (METAL(W)CATALYST)
L22          1 L14 AND METAL CATALYST

=> s l15 and metal catalyst
       1907898 METAL
        951296 METALS
       2311183 METAL
                (METAL OR METALS)
        833374 CATALYST
        829879 CATALYSTS
```

```
       1068162 CATALYST
                 (CATALYST OR CATALYSTS)
         26574 METAL CATALYST
                 (METAL(W)CATALYST)
L23          0 L15 AND METAL CATALYST

=> s 1h-tetrazol-5-yl biphenyl derivatives
        265667 1H
          4026 TETRAZOL
             5 TETRAZOLS
          4029 TETRAZOL
                 (TETRAZOL OR TETRAZOLS)
       6945620 5
        149234 YL
            72 YLS
        149286 YL
                 (YL OR YLS)
         79155 BIPHENYL
         19368 BIPHENYLS
         83122 BIPHENYL
                 (BIPHENYL OR BIPHENYLS)
        369607 DERIVATIVES
       1208132 DERIVS
       1324502 DERIVATIVES
                 (DERIVATIVES OR DERIVS)
L24          1 1H-TETRAZOL-5-YL BIPHENYL DERIVATIVES
                 (1H(W)TETRAZOL(W)5(W)YL(W)BIPHENYL(W)DERIVATIVES)

=> s 1h-tetrazol-5-yl biphenyl
        265667 1H
          4026 TETRAZOL
             5 TETRAZOLS
          4029 TETRAZOL
                 (TETRAZOL OR TETRAZOLS)
       6945620 5
        149234 YL
            72 YLS
        149286 YL
                 (YL OR YLS)
         79155 BIPHENYL
         19368 BIPHENYLS
         83122 BIPHENYL
                 (BIPHENYL OR BIPHENYLS)
L25        230 1H-TETRAZOL-5-YL BIPHENYL
                 (1H(W)TETRAZOL(W)5(W)YL(W)BIPHENYL)

=> s l25 and process
       2766153 PROCESS
       1902364 PROCESSES
       4131723 PROCESS
                 (PROCESS OR PROCESSES)
L26         34 L25 AND PROCESS

=> s l26 and aryl magnesium halide
        237277 ARYL
           629 ARYLS
        237618 ARYL
```

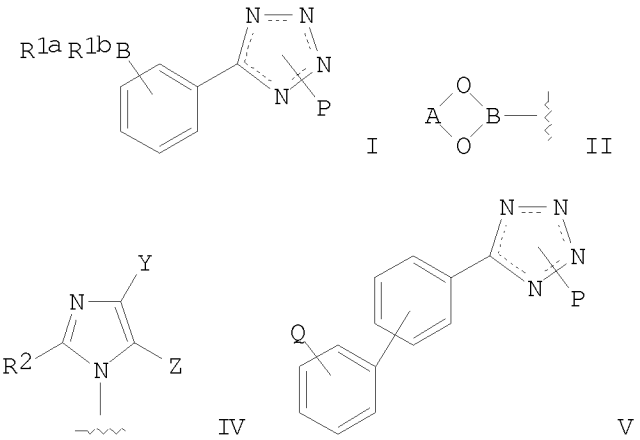
```
                (ARYL OR ARYLS)
        550101 MAGNESIUM
            91 MAGNESIUMS
        550136 MAGNESIUM
                (MAGNESIUM OR MAGNESIUMS)
        162605 HALIDE
        134568 HALIDES
        233992 HALIDE
                (HALIDE OR HALIDES)
            38 ARYL MAGNESIUM HALIDE
                (ARYL(W)MAGNESIUM(W)HALIDE)
L27          0 L26 AND ARYL MAGNESIUM HALIDE

=> s l26 and aryl magnesium
        237277 ARYL
           629 ARYLS
        237618 ARYL
                (ARYL OR ARYLS)
        550101 MAGNESIUM
            91 MAGNESIUMS
        550136 MAGNESIUM
                (MAGNESIUM OR MAGNESIUMS)
            96 ARYL MAGNESIUM
                (ARYL(W)MAGNESIUM)
L28          0 L26 AND ARYL MAGNESIUM

=> s l26 and transition metal catalyst
       1083529 TRANSITION
        280531 TRANSITIONS
       1203452 TRANSITION
                (TRANSITION OR TRANSITIONS)
       1907898 METAL
        951296 METALS
       2311183 METAL
                (METAL OR METALS)
        833374 CATALYST
        829879 CATALYSTS
       1068162 CATALYST
                (CATALYST OR CATALYSTS)
          5907 TRANSITION METAL CATALYST
                (TRANSITION(W)METAL(W)CATALYST)
L29          0 L26 AND TRANSITION METAL CATALYST

=> s l26 and metal catalyst
       1907898 METAL
        951296 METALS
       2311183 METAL
                (METAL OR METALS)
        833374 CATALYST
        829879 CATALYSTS
       1068162 CATALYST
                (CATALYST OR CATALYSTS)
         26574 METAL CATALYST
                (METAL(W)CATALYST)
L30          0 L26 AND METAL CATALYST

=> s l26 and catalyst
```

```
        833374 CATALYST
        829879 CATALYSTS
       1068162 CATALYST
                 (CATALYST OR CATALYSTS)
L31          2 L26 AND CATALYST

=> d his

     (FILE 'HOME' ENTERED AT 10:53:04 ON 09 MAR 2009)

     FILE 'REGISTRY' ENTERED AT 10:53:17 ON 09 MAR 2009
L1             STRUCTURE UPLOADED
L2             0 S L1
L3             0 S L1 SSS FULL
L4             STRUCTURE UPLOADED
L5             1 S L4
L6             2 S L4 SSS FULL

     FILE 'HCAPLUS' ENTERED AT 10:55:44 ON 09 MAR 2009
L7             2 S L6

     FILE 'REGISTRY' ENTERED AT 10:58:55 ON 09 MAR 2009
L8             STRUCTURE UPLOADED
L9            50 S L8
L10        11676 S L8 SSS FULL
L11            STRUCTURE UPLOADED
L12           26 S L11
L13          547 S L11 SSS FULL

     FILE 'HCAPLUS' ENTERED AT 11:02:11 ON 09 MAR 2009
L14         8034 S L10
L15          143 S L13
L16            0 S L14 AND ARYL MAGNESIUM HALIDE
L17            0 S L15 AND ARYL MAGNESIUM HALIDE
L18            0 S L14 AND ARYL MAGNESIUM
L19            0 S L15 AND ARYL MAGNESIUM
L20            0 S L14 AND TRANSITION METAL CATALYST
L21            0 S L15 AND TRANSITION METAL CATALYST
L22            1 S L14 AND METAL CATALYST
L23            0 S L15 AND METAL CATALYST
L24            1 S 1H-TETRAZOL-5-YL BIPHENYL DERIVATIVES
L25          230 S 1H-TETRAZOL-5-YL BIPHENYL
L26           34 S L25 AND PROCESS
L27            0 S L26 AND ARYL MAGNESIUM HALIDE
L28            0 S L26 AND ARYL MAGNESIUM
L29            0 S L26 AND TRANSITION METAL CATALYST
L30            0 S L26 AND METAL CATALYST
L31            2 S L26 AND CATALYST

=> d l22 ibib abs hitstr tot

L22  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER:         1993:671389  HCAPLUS
DOCUMENT NUMBER:          119:271389
ORIGINAL REFERENCE NO.:   119:48577a,48580a
TITLE:                    Tetrazolylphenylboronic acid intermediates for the
                          synthesis of angiotensin II receptor antagonists
```

INVENTOR(S): Lo, Young Sek; Rossano, Lucius Thomas; Larsen, Robert D.; King, Anthony O.
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA; Merck and Co., Inc.
SOURCE: PCT Int. Appl., 50 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9310106	A1	19930527	WO 1992-US9979	19921118
W: AU, CA, CS, FI, JP, KR, NO, PL				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
US 5130439	A	19920714	US 1991-793514	19911118
US 5206374	A	19930427	US 1992-911813	19920710
US 5310928	A	19940510	US 1992-911812	19920710
AU 9331792	A	19930615	AU 1993-31792	19921118
AU 665388	B2	19960104		
EP 643704	A1	19950322	EP 1993-900550	19921118
EP 643704	B1	20030917		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, SE				
JP 08500323	T	19960116	JP 1992-509518	19921118
PL 171453	B1	19970430	PL 1992-303787	19921118
PL 176124	B1	19990430	PL 1992-312131	19921118
SK 280887	B6	20000912	SK 1994-579	19921118
AT 250043	T	20031015	AT 1993-900550	19921118
FI 9402282	A	19940517	FI 1994-2282	19940517
FI 112945	B1	20040213		
NO 9401857	A	19940718	NO 1994-1857	19940518
NO 307932	B1	20000619		

PRIORITY APPLN. INFO.: US 1991-793514 A 19911118
US 1992-911812 A 19920710
US 1992-911813 A 19920710
WO 1992-US9979 A 19921118
OTHER SOURCE(S): CASREACT 119:271389; MARPAT 119:271389
GI

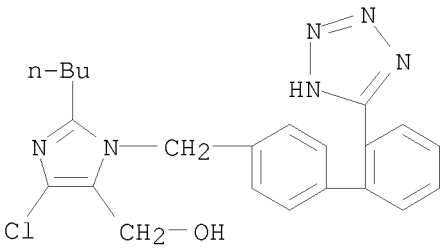


AB Title compds. I [P = Ph3C, Me3C, C1-4-alkoxymethyl, MeSCH2, Ph-C1-4-alkoxymethyl, p-MeOC6H4CH2, 2,4,6-trimethylbenzyl, 2-(trimethylsilyl)ethyl, tetrahydropyranyl, piperonyl, benzenesulfonyl; R1a, R1b = independently Cl, Br, C1-4-alkoxy, OH; or R1aBR1b = II, A = Ph (sic) or (CH2)n, n = 2-4] were prepared as intermediates for the synthesis of angiotensin II receptor antagonists. Thus, reaction of B(OCHMe2)3 with the Li salt of 5-phenyl-2-trityltetrazole carbanion (generated from 5-phenyl-2-trityltetrazole and BuLi), followed by AcOH/H2O hydrolysis, afforded title compound I (P = 2'-Ph3C, R1a = R1b= OH) (III). More advanced intermediates that are precursors for angiotensin II receptor antagonists are prepared by cross-coupling of I with QC6H4X [X = Br, I, methanesulfonyloxy, toluenesulfonyloxy, fluorosulfonyloxy, trifluoromethanesulfonyloxy; Q = H, Me, C1-4-alkyl, hydroxymethyl, triorganosiloxymethyl, hydroxy-C1-4-alkyl, formyl, C1-4-acyl, C1-4-alkoxycarbonyl, WL [L = single bond, (CH2)t, t = 1-4, (CH2)rO(CH2)r, (CH2)rSOr(CH2)r, r = 0-2] and W = IV (R2 = C1-4-alkyl, Y = e.g., C1-4-alkyl, Z = e.g., hydroxymethyl)] in presence of metal catalyst, base, and coupling solvent to afford biphenyls V. Coupling of III with QC6H4X [X = 4-Br; Q = WL [L = CH2, W = IV (R2 = Bu, Y = Cl, Z = CH2OH)]] with catalyst formed from Pd chloride, Ph3P, and P(OCHMe2)3 afforded the corresponding V in 90% yield.

IT 151012-29-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(formation and neutralization of, in preparation of angiotensin II receptor antagonist intermediates)

RN 151012-29-2 HCAPLUS

CN 1H-Imidazole-5-methanol, 2-butyl-4-chloro-1-[[2'-(2H-tetrazol-5-yl)[1,1'-biphenyl]-4-yl]methyl]-, potassium salt, hydrochloride (1:1:?) (CA INDEX NAME)

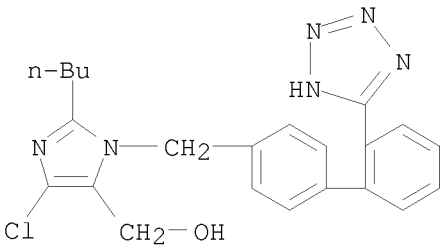


● x HCl

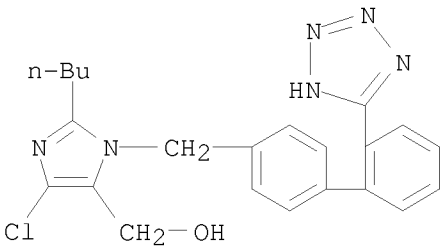
● K

IT 114798-26-4P 124750-99-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as angiotensin II receptor antagonist intermediate)

RN 114798-26-4 HCAPLUS
CN 1H-Imidazole-5-methanol, 2-butyl-4-chloro-1-[[2'-(2H-tetrazol-5-yl)[1,1'-biphenyl]-4-yl]methyl]- (CA INDEX NAME)



RN 124750-99-8 HCAPLUS
CN 1H-Imidazole-5-methanol, 2-butyl-4-chloro-1-[[2'-(2H-tetrazol-5-yl)[1,1'-biphenyl]-4-yl]methyl]-, potassium salt (1:1) (CA INDEX NAME)



● K

=> d l24 ibib abs hitstr tot

L24 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:823694 HCAPLUS
DOCUMENT NUMBER: 143:229864
TITLE: A preparation of (1H-tetrazol-5-yl)-biphenyl derivatives, useful as intermediates for the manufacture of angiotensin II receptor antagonists
INVENTOR(S): Krell, Christoph; Hirt, Hans
PATENT ASSIGNEE(S): Novartis A.-G., Switz.; Novartis Pharma G.m.b.H.
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2005075462	A1	20050818	WO 2005-EP978	20050201
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2005211500	A1	20050818	AU 2005-211500	20050201
CA 2553246	A1	20050818	CA 2005-2553246	20050201
EP 1716140	A1	20061102	EP 2005-707117	20050201
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, HR, IS				
CN 1914197	A	20070214	CN 2005-80003794	20050201
BR 2005007352	A	20070703	BR 2005-7352	20050201
JP 2007519684	T	20070719	JP 2006-550140	20050201
MX 2006008678	A	20061009	MX 2006-8678	20060801
KR 2006128993	A	20061214	KR 2006-715580	20060801
IN 2006CN02815	A	20070608	IN 2006-CN2815	20060801
US 20070129413	A1	20070607	US 2006-588169	20060802
NO 2006003920	A	20061030	NO 2006-3920	20060901
PRIORITY APPLN. INFO.:			GB 2004-2262 A	20040202
			WO 2005-EP978 W	20050201

OTHER SOURCE(S): CASREACT 143:229864; MARPAT 143:229864
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The invention relates to a preparation of (1H-tetrazol-5-yl)-biphenyl derivs. of formula I [wherein: Y is a tetrazole protecting group; R1 and R2 are independently alkyl or combined together form alkylene], useful as intermediates for the manufacture of angiotensin II receptor antagonists (no data). For instance, (1H-tetrazol-5-yl)-biphenyl derivative II was prepared via NiCl2(dppp)-catalyzed coupling of 4-([1,3]dioxan-2-yl)phenylmagnesium bromide with (chlorophenyl)tetrazole derivative III.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l31 ibib abs hitstr tot

L31 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:171944 HCAPLUS
DOCUMENT NUMBER: 146:229349
TITLE: Process for preparing irbesartan and related angiotensin II receptor antagonists
INVENTOR(S): Bessa Belmunt, Jordi

PATENT ASSIGNEE(S): Farmaprojects, S. A., Spain
SOURCE: PCT Int. Appl., 31pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007017469	A2	20070215	WO 2006-EP65056	20060803
WO 2007017469	A3	20070802		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA				
EP 1749828	A1	20070207	EP 2005-381040	20050804
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU				
CA 2617289	A1	20070215	CA 2006-2617289	20060803
EP 1919469	A2	20080514	EP 2006-792689	20060803
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
IN 2008KN00447	A	20081017	IN 2008-KN447	20080131
US 20080281097	A1	20081113	US 2008-997715	20080201
CN 101268065	A	20080917	CN 2006-80034419	20080319

PRIORITY APPLN. INFO.:
EP 2005-381040 A 20050804
US 2005-705827P P 20050804
WO 2006-EP65056 W 20060803

OTHER SOURCE(S): CASREACT 146:229349; MARPAT 146:229349
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The invention relates to a process for preparing angiotensin II receptor antagonists, in particular irbesartan (I; R = H), and protected forms for the preparation thereof. The process renders irbesartan in one step from intermediates that are easy to obtain from com. products. The reaction is selective for the primary amine and presents no interaction with the NH of the tetrazole ring, which eliminates the need for a protecting group. By the process, irbesartan may be obtained without the need of handling explosive and highly toxic reagents, such as azide derivs. The process allows for the efficient and simple preparation of irbesartan and related angiotensin II receptor antagonists of formula I (R = H, tetrazolyl protecting group), as

illustrated by the following example. Suzuki coupling of 4-bromobenzylamine hydrochloride with 2-(1H-tetrazol-5-yl)phenylboronic acid (reference for preparation is given) gave tetrazolylbiphenyl II. Heterocyclization of valeroyl chloride with 1-aminocyclopentanecarboxylic acid gave oxaazaspirononenone III. Condensation of II with III in the presence of an acid catalyst, such as hydrochloric acid, in a polar aprotic solvent, such as Et acetate, resulted in the formation of irbesartan.

L31 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:371249 HCAPLUS
DOCUMENT NUMBER: 142:430273
TITLE: Preparation of candesartan cilexetil
INVENTOR(S): Etinger, Marina Yu; Fedotev, Boris
PATENT ASSIGNEE(S): Teva Pharmaceutical Industries Ltd., Israel; Teva Pharmaceuticals USA, Inc.; Dolitzky, Ben-Zion
SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005037821	A2	20050428	WO 2004-US34540	20041018
WO 2005037821	A3	20050602		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2542499	A1	20050428	CA 2004-2542499	20041018
US 20050131037	A1	20050616	US 2004-968710	20041018
US 7098342	B2	20060829		
EP 1685126	A2	20060802	EP 2004-795674	20041018
EP 1685126	B1	20070321		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1902192	A	20070124	CN 2004-80037005	20041018
AT 357442	T	20070415	AT 2004-795674	20041018
ES 2284068	T3	20071101	ES 2004-795674	20041018
JP 2005206603	A	20050804	JP 2005-14134	20050121
IN 2006DN01977	A	20070713	IN 2006-DN1977	20060412
US 20060252939	A1	20061109	US 2006-485714	20060712

PRIORITY APPLN. INFO.:		
US 2003-512566P	P	20031016
US 2003-523524P	P	20031118
US 2004-537995P	P	20040121
US 2004-568649P	P	20040505
US 2004-968710	A	20041018
WO 2004-US34540	W	20041018

OTHER SOURCE(S): CASREACT 142:430273

AB The invention encompasses processes for the synthesis of cilexetil trityl candesartan (I), namely 1-[[(cyclohexyloxy)carbonyl]oxy]ethyl 2-ethoxy-1-[[2'-(1-trityl-1H-tetrazol-5-yl)-1,1'-biphenyl-4-yl]methyl]-1H-benzimidazole-7-carboxylate, from the reaction of trityl candesartan (II), namely 2-ethoxy-1-[[2'-(1-trityl-1H-tetrazol-5-yl)biphenyl-4-yl]methyl]-1H-benzimidazole-7-carboxylic acid, with cilexetil halide, i.e. 1-[[(cyclohexyloxy)carbonyl]oxy]ethyl halide, in the presence of a base and a low boiling organic solvent. Optionally, the reaction may be conducted in the presence of a phase transfer catalyst. Thus, a suspension of II (2.0 g), cilexetil chloride (1.21 g), K2CO3 (0.81 g) and MeCN (19 g) was stirred at 40° for .apprx.8 h while monitoring the reaction by TLC. The acetonitrile was removed at 30-35° under reduced pressure (10 mbar) to give, after workup, crude I, as a semisolid of 94.38% pure by HPLC. A solution of I (350 g), toluene (1,050 mL), methanol (2,100 mL) and water (17.0 mL) was refluxed for about 2-4 h, and the solvents were evaporated at 40-50°/100 mbar to give a residue as a viscous oil. The residue was dissolved at 45-55° in a mixture of toluene/MeOH (1,041 g, 95:5, weight/weight) to give a clear solution which was cooled to -5 to 20°and kept at this temperature for about 8-12 h. The precipitated solids were filtered off, washed on the filter with cold toluene (350 mL) to give candesartan cilexetil as a wet solid (295.8 g, 83.0%). The wet solid (110 g) was dried at 50°/10 mbar for 2-6 h to give a wet white solid (94 g) which was dissolved in absolute ethanol(215-363 mL), filtered, and cooled at -15° to 5° for .apprx.2-24 h. The precipitated solids were filtered off, washed with cold absolute ethanol (23-35 mL), and dried at 50°/10 mbar to give 21.5 g candesartan cilexetil.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	88.74	860.41

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-3.28	-4.92

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